

ANALYSIS OF FACTORS AFFECTING POPULATION MIGRATION
IN A DEVELOPING ECONOMY--A CASE STUDY ON EGYPT

by

AMIRA EL-BASSYOUNI

B. S., Alexandria University, 1957

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARTS

Department of Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1967

Approved by:

Edgar S. Budge

Major Professor

ACKNOWLEDGMENTS

I am indebted first to the National Institute of Management Development of Cairo and the Egyptian Government for giving me the chance of having more education and which sponsored my two years of study in the United States. I also wish to express appreciation to Dr. Salib Rofail of Cairo, who suggested and aroused my interest in the field "Internal Migration in Egypt" as the subject of my research.

At Kansas State University, I do thank especially Dr. Edgar S. Bagley and Professor Michael J. Greenwood of the Department of Economics, who have given me so generously of their time and counsel. Mr. Greenwood selected the specific topic of the study. I also thank Mr. Michael M. Miller of the Computer Center.

My appreciation also extends to the chairman of the committee, Dr. Donald DeCou, and the members of the committee, Dr. George Montgomery of the Department of Economics, and Professor Mae Baird of the Extension Department, for their encouragement through my graduate program.

Although not directly contributing to this thesis study, the insights which I gained through courses in extension work have helped me to understand better the problems and needs of Egyptian village people.

1-0
3-2-68
TH
1963
EH

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	ii
LIST OF TABLES	iv
CHAPTER	
I. INTRODUCTION	1
II. POPULATION DISTRIBUTION AND INTERNAL MIGRATION IN EGYPT AND OTHER COUNTRIES	9
III. REVIEW OF LITERATURE	29
IV. FORMULATION OF THE MODEL	39
V. EFFECTS OF INDEPENDENT VARIABLES	48
VI. SUMMARY AND CONCLUSIONS	58
BIBLIOGRAPHY	61
APPENDIX	64

LIST OF TABLES

Table	Page
1. Total Population, Population Born and Enumerated in the Same Governorate and Percentaga, 1960 Census, Egypt	5
2. Establishments Employing 10 and More Parsons by Governoratas (1960), Egypt	6
3. Establishments Employing 10 and More Persons by Governorates (1952), Egypt	7
4. Percent and Average Change in Income for Egypt's Governorates During the Period 1952-1960	14
5. Rate of Population Increase and Density for Different Countries	16
6. Trends of Urban and Total Population in Different Countries	17
7. Growth of Population, 1897-1965	19
8. General Information in Census Yaars 1937, 1947, and 1960, Egypt	20
9. Number of Population, Area, and Density in the Big Cities and Total Egypt in 1947 and 1960	23
10. Cities and Urban Agglomerations of 100,000 and More Inhabitants Average Annual Rates of Increase Between The Post-War Period and Recent Years	24
11. Population Growth of Mehalla-El-Kubra, 1882-1960	27
12. Gross Internal Migration 1960 in Egypt	51

CHAPTER I

INTRODUCTION

Mankind is not evenly distributed over the earth's surface. For example, Asia contains more than half of the world's population, while it comprises less than one third of its area. The same situation can exist within a small region or country. In Egypt about 99 percent of the whole population is living in less than 4 percent of the area.

Density of population is different in different areas of Egypt. In 1960 it was 739 person per sq. kms. excluding deserts for the whole country and 15,634 per sq. kms. in Cairo.

The uneven distribution of economic opportunity is more important for reasons of migration than uneven distribution of mankind. Distribution of natural resources and different economic activities in the different areas of Egypt affect population distribution and its movement.

Studies of population distribution, urbanization, and internal migration are important for economic and social planning. Furnishing public utilities, industrial location, population settlement, manpower planning, education and training, urban development planning and balanced development of economic sectors, etc. should be based on the results of these studies.

Studies of internal migration were neglected in the past. It did not receive as early attention as international movements.

There are no comprehensive studies on population migration in Egypt. Data on the place of birth and place of enumeration were published for the first time in the 1960 Census of Population. Charles Issawi stated in his book Egypt in Revolution, "Through their history the Egyptians, one of the most sedentary and longest settled in the world, have shown a marked reluctance to emigrate."¹

If we broadly divide Egypt into three zones--large cities, other cities or towns, and country areas, there will be nine probabilities of movements. The most important are the movements to large cities, and the least important are the movements to country areas, as a result of having rural over-population.

For a long time Egypt's main economic sector was agriculture. In 1959 a comprehensive plan for economic and social development was initiated. In this plan industry was considered as the strong support of the national build-up. About 80 percent of the investment of the first five-year plan of industry was concentrated in four cities: Cairo, Alexandria, Suez, and Asswan.² Thus it is expected that the rate of migration to urban areas will increase.

Migration of population has its economic and social impact on both the origin and the destination. The effects of immigration that were mentioned by Taft can mostly be applied to internal migration.³

¹Charles Issawi, Egypt in Revolution, an Economic Analysis, (Oxford University Press, New York), p. 181.

²Aida Bechara, Industrial Location in the Egyptian Region, (Dar El-Mahda, Cairo, 1962), p. 181.

³Donald R. Taft, Human Migration A Study of International Movements, (The Ronald Press Company, New York, 1936), p. 173.

Taft considered the effect upon the production, consumption, and distribution of wealth, accumulation of capital and unemployment.

Workers move from place to place seeking new jobs or changing jobs. In discussing the labor force as the wealth of a nation, Ginzberg stated that:

Many of those who have been professionally trained in economics, like myself, have long doubted that man operates as a calculating machine, always seeking to maximize his gains and minimize his costs.....

Economists themselves have never had more than a passing interest in questions of human resources. There is one exception--Adam Smith--....A close study of Smith's classic, The Wealth of Nation, leaves an indelible impression that Smith considered the key to a nation's wealth, the skill, dexterity and judgment with which its labor is generally applied.¹

By an optimum utilization of the available natural, human, and financial resources, economic planning can achieve an increase in national production and the standard of living.

There are several economic, social and demographic factors that affect internal migration. Shryock points out that:

It seems likely that many decisions are based on consideration of both economic and noneconomic factors and that what is known about the present residence is compared with what is known about one or more addresses or areas of potential residence.

Comparative net migrations for various geographic areas and residence types tend to be consistent with the frequently made generalization that migration is from areas of lower consumer income and lower levels of living to those where these are higher.²

¹Eli Ginzberg, Human Resources, the Wealth of a Nation, (Simon and Schuster, New York, 1958), p. 12.

²Henry Shryock, Population Mobility Within the United States, (Community and Family Study Center, Chicago, 1964), p. 403.

He also points out that the often equal size of counter-streams suggests that much migration cannot be explained by over-all economic differentials among areas, and that these counter-streams may arise from a variety of causes: (1) Return migration by workers who failed to improve their lot or who had personal reasons bringing them home; (2) The existence of "subuniverses" of economic opportunity, which differ according to industry, occupation, race, sex, age, and so on; (3) noneconomic reasons; (4) imperfect knowledge of relative opportunities in two areas.¹

Factors affecting migration rates are different in the different areas. Percentages of population whose places of enumeration in 1960 and birth were the same varied between governorates of Egypt in the 1960 Census of Population. This percentage was low in the large cities and urban governorates and high in the others. They were 41, 53, 60, 62, and 72 in the Red Sea, Suez, Ismailia, Cairo and Alexandria respectively, while they were 98, 97, 96, and 93 in Kena, Assiut, Dakahlia and Kafr El-Sheikh respectively as shown in Table 1.² If we look at Table 2 and 3 we will find that large cities have the highest average annual wage per worker (except that of Behera which was L.E 226.7)*, and that most of the governorates which had a high percentage of

¹Ibid., p. 403.

²Department of Statistics and Census, 1960 Census of Population, Volume II, General Tables (Cairo, July 1963), p. 50.

*L.E are symbols which stand for libre Egyptian or Egyptian pound. A pound is approximately equal to two dollars.

TABLE 1

TOTAL POPULATION, POPULATION BORN AND ENUMERATED IN THE
SAME GOVERNORATE AND PERCENTAGE, 1960 CENSUS, EGYPT

Pop. of Governorate	Total Population*	Pop. in the Same Governorate of Birth and Enumeration*	Percentage
Cairo	3,348,779	2,079,434	62.09
Alexandria	1,516,234	1,085,602	71.59
Port Said	245,318	168,046	68.50
Ismailia	284,115	171,297	60.29
Suez	203,610	109,727	53.89
Damietta	387,962	349,188	90.00
Dakahlia	2,014,883	1,938,317	96.19
Sharkia	1,819,798	1,744,224	95.84
Kalyubia	988,055	886,464	89.71
Kafr-El-Sheikh	973,019	912,369	93.76
Gharbia	1,715,212	1,604,851	93.56
Menoufia	1,334,953	1,308,283	98.00
Behera	1,685,679	1,571,897	93.25
Giza	1,336,418	1,040,179	77.83
Beni Souef	859,832	826,609	96.13
Fayoum	839,163	812,168	96.78
Minya	1,560,311	1,510,244	96.79
Assiut	1,329,588	1,290,255	97.04
Souhag	1,578,858	1,540,020	97.54
Kena	1,351,358	1,319,514	97.64
Asswan	385,350	331,685	86.07
Red Sea	25,452	10,543	41.42
Wadi El-Gedid	33,932	32,354	95.34
Matrouh	103,453	93,800	90.66
Sinai	49,769	31,873	64.04
Total	25,984,101	22,768,943	876.26

*Source: 1960 Census of Population, op. cit.

TABLE 2
ESTABLISHMENTS EMPLOYING 10 AND MORE PERSONS
BY GOVERNORATES (1960), EGYPT

Governorates	No. of Workers	Percentage to Total Workers (%)	Total Payments in Cash and Kinds (000 L.E.)	Annual Average Wage Per Worker L.E.
Cairo	80,096	24.50	10,238	127.8
Alexandria	80,557	24.64	11,121	138.1
Port Said	1,563	0.48	283	181.1
Ismailia	756	0.23	103	136.2
Suez	6,020	1.84	2,108	350.2
Damietta	1,338	0.41	118	88.2
Dakahlia	3,221	0.99	339	105.2
Kalyubia	31,859	9.75	3,856	121.0
Sharkia	3,143	0.96	285	90.7
Kafr-El-Sheikh	790	0.24	48	60.8
Gharbia	32,834	10.04	4,858	148.0
Menoufia	1,971	0.60	126	63.9
Behera	22,694	6.94	5,145	226.7
Giza	24,517	7.50	3,947	161.0
Beni Souef	1,372	0.42	117	85.3
Fayoum	1,104	0.34	100	90.6
Minya	4,390	1.34	435	99.1
Assiut	2,023	0.62	149	73.7
Souhag	1,040	0.32	110	105.8
Kena	5,899	1.80	654	140.9
Asewan	3,311	1.01	446	134.7
Frontier Govern.	16,437	5.03	2,867	174.4
Total	326,935	100.00	47,453	145.1

Source: Central Statistical Committee, Basic Statistics, June 1962, p. 94.

TABLE 3
ESTABLISHMENTS EMPLOYING 10 AND MORE PERSONS
BY GOVERNORATES (1952), EGYPT

Governorates	No. of Workers	Percentage to Total Workers (%)	Total Payments in Cash and Kinds (000 L.E.)	Annual Average Wage per Worker L.E.
Cairo	65,151	23.85	7,275	111.7
Alexandria	69,500	25.44	8,019	115.4
Port Said	3,328	1.22	712	213.9
Ismailia				
Suez	5,195	1.91	2,083	401.0
Damietta	1,232	0.45	99	80.4
Dakahlia	8,611	3.15	407	47.3
Kalyubia	21,837	7.99	2,253	103.2
Sharkia	2,492	0.92	195	76.3
Kafr-El-Sheikh	1,425	0.52	87	61.1
Gharbia	30,973	11.34	3,163	102.1
Menoufia	2,086	0.76	100	47.9
Behera	22,598	8.27	2,780	123.0
Giza	14,969	5.48	2,205	147.3
Beni Souef	1,768	0.65	143	80.9
Fayoum	964	0.35	98	101.7
Minya	5,009	1.83	445	88.8
Assyuit	3,576	1.31	190	53.1
Souhag	1,939	0.71	144	74.3
Kena	3,348	1.23	528	157.7
Asswan	1,396	0.51	184	131.8
Frontier Govern.	5,759	2.11	754	130.9
Total	273,156	100.00	31,864	116.7

Source: Central Statistical Committee, Basic Statistics,
June 1962, p. 96.

population born and enumerated in the same governorate had typically the lowest annual average wage. This indicates that there must be a relationship between level of income and movement of population.

This study deals with some selected factors that were thought to affect population migration. These factors are distance from origin to destination, education of origin and destination, level of income of origin and destination and also levels of urbanization and population size. Data of this study were collected for each governorate. In running the regression program, the data was pooled.¹

The second chapter is an attempt to provide an explanation and comparison of population distribution, internal migration, and urbanization in Egypt and other countries. Chapter III is concerned with similar and related studies which have been done before. The formulation of the model that was used in this analysis and the theoretical relationship between the independent variables and dependent variable is set out in Chapter IV. Chapter V deals with the empirical findings and is based on selected regression equations. Finally Chapter VI summarizes the findings and offers suggestions for future research.

¹The data was pooled for 24 governorates out of 25. The governorate of El-Wadi EL-Gedid was excluded as its data were not available.

CHAPTER II

POPULATION DISTRIBUTION AND INTERNAL MIGRATION IN EGYPT AND OTHER COUNTRIES

The Uneven Distribution of Population

Population is not evenly distributed over the earth's surface. Africa's area is 22 percent of the total area of the world while its population is about 8 percent of the world's population. Asia contains over half of the world's population who are living on less than one third of its area. Density of population of the world is 21 persons per square kilometer. Density of population differs from country to country and also within the country. When questioning whether the area is over-populated or under-populated, we face the problem of definition. There is no definite measure, but it varies according to many factors such as the fertility of soil, the economic activity of people, level of skills and education, facilities of transportation, and natural resources.

Factors Affecting Density

Natural conditions affect density of population. Generally, population is dense where water is in good supply. Density is high along the river valleys in high rainfall areas, in the wooded and grasslands, and where climate is good. Population is considerable along the river valleys in Mali and Egypt in Africa, while their deserts are

sparsely populated by nomads. Population density in Chad averages 2 per square kilometer. On the other hand in Africa, in the equatorial and central parts, population densities are very low as a result of forest barriers and the poverty of soil. Most areas of Congo and Angola have low density. In other parts, farther south, South West Africa and Bechuanaland have population densities of about one or less per square kilometer. In East Africa, density on the average is not as high as in the West except in certain areas. In Uganda which lies around Lake Victoria, the average density is as high as 80. Ruanda and Burundi, Kenya, Nyassaland, South Tanganyika, and Southern Rhodesia have the same high density, which is due to their volcanic, fertile soil and the relative shortness of the dry season. In Algeria in the north of Africa, overall density is 4 persons per square kilometer and the population is concentrated in the cultivated area. About 60 per cent of the population in Libya is located in the fertile coastal strip and in the Barca plain plateau. In Egypt, as mentioned before, the population is concentrated in the Nile Valley, the Delta, and the Canal Zone.

The availability of transportation facilities is another important factor governing the geographical distribution of population within a region. According to a United Nations study, lack of adequate transport facilities has reduced agriculture in many regions to subsistence crops and also caused migration seasonal or otherwise, of workers in search of employment. Hence, there are in Africa regions of labor shortage and regions of labor surplus, income being relatively lower in these regions

which are also out-migration areas.¹

For example, the location of town and urban development in the coastal regions of West Africa was influenced by transport facilities. Many towns grew up on trade routes. In northern Africa, Cairo as a center between Upper and Lower Egypt, and Alexandria, as a port, were influenced by their location and transport facilities in their growth.

Density of population and uneven distribution of population affect migration but the most important is the uneven distribution of economic opportunity.

Internal Migration

According to a United Nations report, there are four types of internal migration which may be distinguished as follows:

The Movements of Nomads. Pastoral tribes migrate seasonally to find grazing for their herds. This type of migration is observed in North Africa as well as in Africa South of the Sahara. As example, we can cite, in Egypt, the movements of Nomads in the Western and Eastern Desert, and Sinai.

Another type of migratory movement originates from the system of recruitment and labour contracts. These movements are often under the control of authorities but in the majority of cases, they are outside any form of control. The duration of these movements as well as the distances covered by the migrants varies greatly from one country to another. The main feature is that it involves only the male labor force without any movement of children or other dependents.

A third type of migration is of more permanent character. It stems from the dual character of African economics. The traditional sector (family and subsistence agriculture, handicrafts, etc.) and modern sector (organized agriculture, industry and commerce).

¹United Nations, Economic Commission for Africa, Seminar on Population Problems in Africa, 29 October, 10 November 1962, Cairo, United Arab Republic, p. 9.

Considerable migratory movements occur, mostly from the traditional sector to the modern sector. By and large, stagnation reigns in the traditional agriculture and handicraft economy. The general picture is a considerable amount of unemployment and disguised unemployment in the sense that without any improvement in technical methods, heavy out-migration in many parts of Africa would not reduce output.

In this type of migration, we can classify part of the migratory flow from countryside to urban areas, migration from upper Egypt to the Delta, migration in Morocco between different rural areas, nonseasonal migratory flows from the savannah zones to the coastal belts of West Africa, etc.

Migratory movements of temporary and seasonal character. To a considerable extent they represent an adjustment of labor to the unequal distribution of population in relation to resources. The volume of these movements is vaguely known, but their direction is mainly from subsistence rural areas to cash-crop areas, from rural areas to urban areas as temporary workers during the seasons where there is little to do on the land.¹

Selected Factors Affecting Internal Migration

Why do people move? Where should they be? There are several factors affecting movement of people. In general internal migration is a result of imbalance between economic and social levels of different areas. According to Goodrich, "In well directed migration, we should expect people to move from places where they have fared badly to places where people have fared better."

Factors affecting population migration can be summarized as follows:

¹Ibid., p. 10.

²Carter Goodrich and others. Migration and Economic Opportunities. (University of Pennsylvania Press, 1936). p. 11.

- (1) Economic factors.
- (2) Demographic factors.
- (3) Social and cultural factors.
- (4) Other factors--military, contract, etc.

Different regions or governorates of Egypt differ in economic and social structure. One of the economic indices that affects migration is wages. Tables 2 and 3 show the wide range between annual average of wages in the governorates of Egypt in 1952 and 1960, in industrial establishment employing 10 persons or more. Table 4 shows the average annual change in wages and percentage change of wages for every governorate.

Percentages of population who were born and enumerated in the same governorate in the 1960 Census of Population show also a wide range between governorates, as mentioned in the introduction.

Urbanization

Attempts to define urban areas were made in Germany in the beginning of this century by Bruckner, Hasse, and Schott. They defined an urban area as a geographic unit with circles around the center of the area or city, using a radius of 10, then 15, and even 20 km. This way was not efficient as it included areas not urban in character, and did not consider the interaction between the central city and areas external to it.

Later studies were made in the United States and the United Kingdom. According to Boustedt:

TABLE 4

**PERCENT AND AVERAGE CHANGE IN INCOME FOR EGYPT'S GOVERNORATES
DURING THE PERIOD 1952-1960**

Governorate	Percent change in income		Average change in income
	%	Y1	Y1
Cairo	.14		2.01
Alexandria	.20		2.83
Port Said	0		0
Ismailia	0		0
Suus	-.13		6.65
Damietta	.10		9.80
Dakahlia	1.22		7.24
Sharkia	.16		1.55
Kalyubia	.17		2.23
Kafr-El-Sheikh	0		0.04
Gharbia	.45		5.72
Manoufia	.33		2.00
Behera	.46		12.96
Giza	.93		1.71
Beni Suif	.05		.55
Fayoum	.11		1.39
Minya	.12		1.29
Assyut	.39		2.58
Souhag	.42		3.93
Kena	-.30		5.85
Asswan	.02		0.36
Red Sea	0		0
Matrouh	0		0
Sinai	0		0

Source: Data of annual average wage per worker of Tables 2 and 3 was used to get data of this table.

There is also agreement concerning certain basic characteristics of the region and its component parts. Always to be taken into account are: (1) the share of the labor force engaged in agriculture, a ratio which characterizes population structure; (b) the density of the population and, if possible, the type of buildings, as characterizations of the residential pattern; (c) the number of persons commuting from the individual parts of the agglomeration area into the central city, as a characterization of interaction.¹

In the 1960 Census of Population of Egypt, urban areas includes governorates of Cairo, Alexandria, Port Said, Suez, Ismailia, Frontier Governorates and capitals of other governorates as well as district (Markaz) capitals.

Population Growth and Urbanization

Population growth is one of the basic factors affecting internal migration and urbanization. Throughout history, the urban cycle has always been the same: population growth transformed rural areas into urban areas and cities. Table 5 shows the annual rate of increase of population in different countries.

Percentages of urban population vary in a wide range between underdeveloped and developed countries. In 1954 urban population in Nepal was 2.8 percent of the total population (8,473,478). China was 14.2 percent in 1956. Monaco with 20,422 persons in 1956 had 100 percent urban population, while it was 82.9 percent in Scotland in 1951, 80.8 percent in England in 1951, 71.7 percent in Germany in 1959, 66.6 percent in 1956 in Canada, and 64.0 percent in 1950 in the United States.²

¹Olaf Boustedt, Some National Approaches to Delimiting Urban Boundaries, Urban Research Methods, (D. Van Nostrand Co., Inc., Princeton, New Jersey, 1961). p. 42.

²United Nations, Demographic Year Book 1960, 12th Issue, p. 273.

TABLE 5
RATE OF POPULATION INCREASE AND DENSITY*
FOR DIFFERENT COUNTRIES

Country	Annual rate of increase 1953-1960 (%)	Density 1960
Ghana	6.2	28
Guinea	4.3	12
Libya	1.6	1
South Africa	2.4	13
United Arab Republic	2.4	26
Algeria	2.3	5
Canada	2.6	2
Mexico	3.1	18
United States of America	1.7	19
Bahrain	3.4	246
China	2.3	68
India	1.9	136
Israel	3.6	102
Japan	1.0	252
Nepal	1.6	67
United Kingdom, England and Wales	0.5	303
Switzerland	1.3	130

Source: Derived from Demographic Yearbook 1961, United Nations, Table I, p. 101.

*Density is the number of persons per square kilometer.

In Egypt urban population was 36.9 percent of the total population in 1960. Table 6 shows trends of total and urban population in different countries.

According to the Egyptian Association of Population Studies, in the twentieth century, Egypt had two stages of population growth. The first was ended when the Second World War started. The natural increase of population in this first stage did not exceed 1.3 percent annually. The second stage began after the Second World War, and the

TABLE 6
TRENDS OF URBAN AND TOTAL POPULATION
IN DIFFERENT COUNTRIES

Country	Date	Both Sexes		
		Total	Urban	Percent
Algeria	1926	5,444,361	1,100,143	20.2
	1954	9,433,363	2,157,938	22.9
Union of South Africa	1921	6,928,580	4,002,406	25.1
	1951	12,671,452	8,227,641	35.8
United Arab Republic Egypt	1937	15,920,694	4,002,406	25.1
	1957	22,996,904	8,227,641	35.8
Canada	1921	8,787,949	4,352,122	49.5
	1956	16,080,791	10,714,855	66.6
Mexico	1930	16,552,722	5,540,631	33.5
	1956	30,538,050	13,467,685	44.1
United States	1920	105,710,620	54,157,973	51.2
	1950	150,697,361	96,467,686	64.0
China	1949	541,670,000	57,650,000	10.6
	1956	627,800,000	89,150,000	14.2
Japan	1920	55,391,481	10,020,038	18.1
	1955	89,275,529	50,288,028	56.3
Nepal	1952	8,473,478	238,475	2.8
Monaco	1946	19,242	19,242	100.0
	1956	20,422	20,422	100.0
Scotland	1921	4,882,497	3,771,762	77.0
	1951	5,096,115	4,226,803	82.9
Switzerland	1920	3,880,320	1,071,554	27.6
	1950	4,714,992	1,720,057	36.5
United Kingdom	1921	37,886,699	30,035,417	79.3
	1951	43,757,888	35,361,797	80.8

Source: Derived from Demographic Yearbook, 1961, United Nations.
Table 9: Urban and Total Population by Sex 1920-1960, p. 373.

annual rate of increase of population rose to 2.4 percent. This will lead to a doubling of the population in 30 years.¹ According to the Administration of Public Mobilization and Census, the population of Egypt was 30 million and 53 thousand in 1965, and the annual increase was 2.7 percent. Table 7 shows the growth of population from 1897 to 1965.

Urban population grew at higher rates--3.2 and 3.1 percent annually in the periods 1937-1947 and 1947-1960 respectively. Urban population grows as a result of internal migration and natural increase of population. The higher rates are mostly a result of increase of net-migration. Two main streams of movements may be observed: from Upper to Lower Egypt, and from the country to the towns. Upper Egypt is more densely populated than lower Egypt, excluding Cairo and Alexandria and other big cities.

The number of large towns* in Lower Egypt was 46, 51, and 57 in the censuses of 1937, 1947 and 1960 respectively. In the same years the number of large towns in Upper Egypt was 38, 44, and 57 respectively. Most of the industries are located in Cairo, Alexandria, and other governorates in Lower Egypt (see general information about Egypt, Table 8). In 1960 about 81.6 percent of the workers of establishments employing 10 workers or more were working in Cairo, Alexandria and Lower Egypt, and only 18.4 percent of the workers were in Upper Egypt (see Table 2).

¹Egyptian Association of Population Studies of Cairo, Basis of Population Policies, 1964, p. 9.

*Large towns are those whose population is 30,000 inhabitants or more.

TABLE 7
GROWTH OF POPULATION, 1897-1965

Year	Population (incl. Nomads)	Annual percent rate of increase during interval
1897	9,715,000	--
1907	11,287,000	1.51
1917	12,751,000	1.23
1927	14,218,000	1.09
1937	15,933,000	1.15
1947	19,022,000	1.78
1960	26,059,000	2.45
1965 ¹	30,052,000	2.70

Source: Issawi, p. 77, op. cit.

¹1965 data was obtained from the Administration of Public Mobility and Census. (The Sample Survey Census of Population of 1965).

According to Issawi, agricultural income was as follows:

In 1955/56 gross agricultural income was put at L.E. 52 per person in agriculture in Upper Egypt, and in Lower Egypt L.E. 75 per person; a breakdown by province shows a marked inverse correlation, -0.78 between population density per cultivated faddan and agricultural per capita income.

All big cities are in Lower Egypt, namely, Cairo, Alexandria, Port Said, Ismailia, and Suez. For this reason and for the reasons mentioned above the population of Lower Egypt grew more rapidly than that of Upper Egypt. During the decade 1937-1947 the percentage growth of Lower Egypt ranged from 13.7 for Kalyubia to 20.1 for Sharkia (excluding the two border governorates, Giza and Menoufia). In Upper Egypt the percentage ranged between 14.8 in Assiut to 4.7 in Asswan.¹

¹Ibid., p. 84.

TABLE 8
GENERAL INFORMATION IN CENSUS YEARS
1937, 1947, AND 1960, EGYPT

	1937	1947	1960
Total population (1,000's)	15,921	18,966	26,069
No. of large cities (in urban Governorates)	6	6	5
Population of large cities (1,000's)	2,249	3,416	5,582
Percentage to total population	14.1%	18.0%	21.4%
No. of large towns in Lower Egypt	46	51	62
No. of large towns in Upper Egypt	38	44	57
Urban population in both Lower and Upper Egypt (1,000's)	1,622	2,299	4,048
Percentage to total population	10.2%	12.1%	15.5%
No. of villages in Lower Egypt	2,237	2,248	2,339
No. of villages in Upper Egypt	1,684	1,709	1,682
Rural population in both Lower and Upper Egypt (1,000's)	11,940	13,090	16,119
Percentage to total population	75.0%	69.0%	61.9%
No. of districts in Frontier Governorates	16	25	25
Population of Frontier Governorates (1,000's)	110	161	320
Percentage to total population	0.7%	0.9%	1.2%
Total area of the Republic (1,000 sq. kms.)	1,002	1,002	1,002
Inhabited area (1,000 sq. kms.) excluding deserts	34.2	34.8	35.4
Inhabited area (1,000 faddans) excluding deserts	8,139	8,289	8,531
Density of population (per sq. kms.) excluding deserts	466	545	739
Cultivated area (1,000 faddans)	5,281	5,761	5,844
Cultivated area (1,000 faddans)	8,358	9,147	10,296
Crop area (1,000 faddans)	8,358	9,147	10,296

Source: Central Statistical Committee, Basic Statistics, (Cairo, June 1962), p. 5.

In 1960 the percentage of inhabitants in each governorate born outside its borders ranged from 46% in Suez to 96.2% in Dakahlia in Lower Egypt and from 86.1% in Asswan to 97.6% in Kena (Table 1).

In 1960 a sample study in Cairo (6,000 migrants) showed that 98 percent of migrants came from rural areas. Fifty-three percent of the population of Cairo were born in that city, 94 percent were under 45 years old and 40 percent of them were illiterate.¹

Growth of Big Cities²

In the 1937, 1947 and 1960 censuses, big cities numbered 6, 6, and 5 respectively. (Damietta was counted as a governorate in 1960 census.) Red Sea, New Valley, Matrouh and Sinai were counted as new urban governorates in the 1960 Census of Population.

Cairo and Alexandria are the largest cities in Egypt and had 3,348,779 and 1,516,234 inhabitants respectively, in the 1960 census. Between 1917 and 1937 the population of Cairo rose from 791,000 to 1,312,000 and for Alexandria from 445,000 to 686,000, an increase of 66 and 55 percent respectively. Between 1937 and 1960 the rates of population growth of the two cities of Cairo and Alexandria were 39 and 45 percent respectively.

The five big cities have a very high density of population. In 1947 and 1960, density in Cairo was 11,597 and 15,634 inhabitants per

¹El-Ahram, Cairo, 17 Jan., 1962, p. 5.

²In 1934 and 1947 big cities were Cairo, Alexandria, Suez, Ismailia, Port Said and Damietta, but in 1960, Damietta was excluded as a big city as it had some rural areas.

square kilometer respectively. As Alexandria's area has been doubled more than three times, density was 13,372 and 5,237 in 1947 and 1960 respectively. In 1947, Canal Zone density was 982, in 1960 it was divided into Port Said and Ismailia which had 617 and 343 density per square kilometer respectively. In 1947 and 1960 Suez density increased from 307 to 663 per square kilometer as the area was the same. Density of population differs inside the city and sometimes it has a wide range between the smallest administrative unit or districts. A case such as Alexandria's density in 1947 and 1960 has to be studied on the district level as the area increased and included new districts which had low density compared with the old districts (see Table 9).

A study made by the United Nations shows a wide range between the annual rates of increase of population in different African cities and urban agglomerations of 100,000 and more inhabitants.

In the post-war period annual growth of cities and urban agglomeration shown in Table 10 for African countries varies from less than one percent in Bone of Algeria to 14.21 in Leopoldville of Congo. In the same period, cities of Egypt grew by an annual rate ranging from 1.39 in Port Said to 7.89 in Suez. Comparing the growth of the early post-World War II period with the growth in recent years, the annual rates of increase of population in recent years in the African countries vary from 1.04 in Lourenco Marques of Mozambique to 11.01 in Salisbury of Rhodesia and Nyassaland.

In recent years, some cities grew by higher rates than in the immediate post-war period, while other cities grew by lower rates.

TABLE 9
NUMBER OF POPULATION, AREA, AND DENSITY IN THE BIG CITIES
AND TOTAL EGYPT IN 1947 AND 1960

	Population ¹	1947 Area ² km ²	Density	Population ¹	1960 Area ² sq.km.	Density
Cairo	2,075,914	179	11,597	3,348,779	214	15,634
Alexandria	949,446	71	13,372	1,516,234	290	5,237
Port Said				245,318	397	617
Ismailia	341,672	348	982	384,115	829	343
Suez	107,244	307	349	203,610	307	663
Total of Egypt	18,966,767	1,002	545	25,984,101	1,002	739

Sources: ¹1947 and 1960 Census of Population.

²Department of Statistics and Census.

In recent years Constantine of Algeria grew by 10.93 percent per year, while it grew by 2.84 in the early post-war period. In recent years Lourance Marques grew by 1.04 while it grew in the post-war period by 4.73 percent as mentioned above.

Suez of Egypt grew by 2.98 percent in recent years while it grew by 7.89 percent in the early post-war period. Some other cities grew by lower rates in recent years than in the post-war period: Assyuit, Cairo, Ismailia, Mansoura and Tanta (Table 10).¹

¹United Nation, Economic Commission for Africa, Seminar on Population Problems in Africa, 29 Oct. to 10 Nov., 1962, Population Distribution, Internal Migration and Urbanization in Africa, No. 62-2591.

TABLE 10

CITIES AND URBAN AGGLOMERATIONS OF 100,000 AND MORE INHABITANTS
 AVERAGE ANNUAL RATES OF INCREASE BETWEEN
 THE POST-WAR PERIOD AND RECENT YEARS
 (C: city proper; A: urban agglomeration)

Countries and cities	Period	Increase Percent	Period	Increase Percent
<u>North Africa</u>				
<u>Algeria</u>				
Alger	C 1936-1954	1.74	A 1948-1959	4.68
Bone	C 1936-1948	0.80	C 1948-1954	6.53
			A 1948-1959	2.12
Constantina	C 1936-1948	2.84	C 1948-1954	10.93
			A 1948-1959	6.50
Oran	C 1936	1.66	C 1948-1954	3.37
			A 1948-1959	2.80
Sidi-bel-Abbes	C 1936-1948	0.85	C 1948-1959	5.94
<u>Morocco</u>				
Casablanca	C 1936-1951-52	6.49	C 1951-52-1960	4.11
Fes	C 1936-1951-52	1.37	C 1951-52-1960	2.23
Marrakech	C 1936-1951-52	0.80	C 1951-52-1960	1.40
Meknes	C 1936-1951-52	4.11	C 1951-52-1960	2.80
Oujda	C 1936-1951-52	5.68	C 1951-52-1960	5.79
Rabat	C 1936-1951-52	4.15	C 1951-52-1960	4.40
Tetoun			C 1945-1960	0.48
<u>Tunisia</u>				
Tunis	C 1936-1946	5.19	C 1946-1956	1.17
<u>Egypt</u>				
Alexandria	C 1937-1947	2.97	C 1947-1959	3.17
Assyuit	C 1937-1947	4.13	C 1947-1959	2.50
Cairo	C 1937-1947	4.77	C 1947-1959	2.63
Damanhur	C 1937-1947	3.08	C 1947-1959	3.28
El Mahalla el Kubra			C 1947-1959	2.72
Giza	C 1937-1947	5.68	C 1947-1959	8.39
Ismailia	C 1937-1947	6.28	C 1947-1959	4.32
Mansura	C 1937-1947	3.98	C 1947-1959	2.92
Port Said	C 1937-1947	1.39	C 1947-1959	2.01
Suez	C 1937-1947	7.89	C 1947-1959	2.98
Tanta	C 1937-1947	3.95	C 1947-1959	1.88
Zagazig	C 1937-1947	3.18	C 1947-1959	3.30

TABLE 10 (continued)

Countries and cities	Period	Increase Percent	Period	Increase Percent
<u>East Africa</u>				
<u>Ethiopia</u>				
Addis-Ababa	C 1938-1957	2.73		
<u>Kenya</u>				
Mombasa			C 1948-1959	5.43
Nairobi			C 1948-1959	7.40
<u>Madagascar</u>				
Tananarive	C 1936-1948	3.24	C 1946-1959	3.18
<u>Mozambique</u>				
Lourenco Marques	C 1935-1950	4.73	C 1950-1956	1.04
<u>Tanganyika</u>				
Dar-es-Salaam	C 1931-1948	6.68	C 1948-1957	7.20
<u>South Africa</u>				
<u>Union of South Africa</u>				
Benoni	A 1936-1946	1.03	A 1946-1960	4.38
Bloemfontein	A 1936-1946	2.64	A 1946-1960	3.86
Cape Town	A 1936-1946	2.19	A 1946-1960	3.19
Durban	A 1936-1946	3.36	A 1946-1960	4.12
East London	A 1936-1946	2.63	A 1946-1960	2.73
Germiston	A 1936-1946	4.66	A 1946-1960	3.25
Johannesburg	A 1936-1946	3.06	A 1946-1960	2.64
Port Elisabeth	A 1936-1946	3.01	A 1946-1960	4.42
Pretoria	A 1936-1946	6.49	A 1946-1960	3.88
Springe	A 1936-1946	2.47	A 1946-1960	1.41
Vereeniging	A 1936-1946	5.24	A 1946-1960	7.90
<u>West Africa</u>				
<u>Angola</u>				
Louande	C 1930-1950	5.26		
<u>Cameroun (Yaounde)</u>				
Douala	C 1931-1954	6.44		
<u>Congo (Braz)</u>				
Brazzaville	C 1931-1946	9.96	C 1946-1959	3.74

TABLE 10 (continued)

Countries and cities	Period	Increase Percent	Period	Increase Percent
<u>West Africa (cont'd)</u>				
<u>Ghana</u>				
Accra	C 1936-1948	5.56	C 1948-1960	11.29
<u>Guinea</u>				
Conakry	C 1936-1946	7.18	C 1946-1960	3.65
<u>Ivory Coast</u>				
Abidjan	C 1933-1946	7.49	C 1946-1955	10.92
<u>Nigeria</u>				
Ibadan	C 1936-1952	1.08		
Ife	C 1931-1952	7.53		
Iwo	C 1931-1952	2.72		
Kano	C 1931-1952	1.82		
Lagos	C 1936-1950	3.77	C 1950-1960	4.69
Ogbomoso	C 1931-1952	2.29		
Oghogbo	C 1931-1952	4.27		
<u>Senegal</u>				
Dakar	C 1936-1946	3.51	C 1946-1954	7.40
<u>Sierra Leone</u>				
Freetown			C 1947-1959	3.65
<u>Central Africa</u>				
<u>Congo (Leo)</u>				
Elisabatville			C 1946-1959	9.52
Leopoldville	C 1938-1947	14.21	C 1947-1959	10.67
<u>Rhodesia and Nyassaland, fed. of</u>				
South Rhodesia			A 1946-1959	10.31
Salisbury			A 1946-1959	11.01

Source: United Nation, Economic Commission for Africa, Seminar on Population Problems in Africa, 1962, Population Distribution, Internal Migration and Urbanization in Africa. No. 62-2591, p. 11.

Rates computed according to data given on Demographic Yearbook 1960, Table 7. For the population of these cities and urban agglomerations see the same table.

As mentioned in another United Nations study, "One of the earliest and most spectacular instances of industrialization as a factor contributing to urbanization is that afforded by the town of Mehalla-al-Kubra in the United Arab Republic." Before 1927 the nature of manual type of manufacturing kept the population at a relatively low figure. The following table (Table 11) explains the situation clearly.

TABLE 11
POPULATION GROWTH OF MEHALLA-EL-KUBRA, 1882-1960*

	1882	1897	1907	1917	1927	1937	1947	1960
Population	27,851	31,791	33,547	38,088	45,642	63,292	115,758	178,288
Percentage growth		9	6	14	20	39	83	53

*United Nations, International Social Service Review, Urbanization in the Arab States and its Effects on Family Life, No. 9, New York, April, 1963, p. 20.

In 1927 the biggest textile works in the Middle East (Mier Spinning and Weaving Co.) was established in Mehalla. The industrialization process apparently stimulated population growth of the town, which increased by 20, 39, and 83 percent in the decades 1927, 1937, and 1947 respectively. The rate of growth dropped to 53 percent in the next decade according to the 1960 census. The drop was due to the fact that the government planned to establish other factories in other parts of the same Governorate of Gharbia. The new centers, Meut-Ghamr and Tanta, began to attract the migration of rural population, in addition

to the factories established in other governorates such as Dakahlia and Menoufia. Another example is that of Kafr-el-Dawar, a small town twenty kilometers southeast of Alexandria. In 1897, it was a small village of 850 inhabitants. By 1937 its population had risen to 1,980. By 1947 it had become a textile industrial town of 11,058. Its population rose sharply with the expansion of existing factories and the establishment of new ones, until it reached 254,817 in 1960 population census.¹

Rapid growth of cities and urban areas is mostly a result of internal migration, especially rural-urban migration. Internal migration affects the economic, social, and demographic structure of the country. For that reason and others, studying factors affecting migration is important.

¹Ibid., p. 21.

CHAPTER III

REVIEW OF LITERATURE

The field of empirical analysis of internal migration can be considered as a new one. But in general, perhaps the earliest study of human migration was done by Ravenstein in the 1880's. He discussed some "laws" of geographic migration concerning population movements in the United Kingdom. The most important finding of this study was that distance is an essential factor influencing migratory movements.¹

Internal migration took place through the United States history and until the present time. Hathaway in his study on "Facilitating Movements of Labor Out of Agriculture," tried to answer some questions related to this subject.² He pointed out between 1920 and 1960 more than 25 million people have migrated from farms to urban areas and non-farm occupations, and that migration from farms has persisted through depressions and wars. The rate of migration in the 1920-30 decade was 19 percent of the beginning population. By 1950 more than one-half of the 1940 farm population age 10-19 had left the farms,, and about 40 percent of the age group 20-24 on farms in 1940 had left the farms

¹E. G. Ravenstein, "The Laws of Migration," Journal of the (Royal) Statistical Society, XLVIII (1885), 167-227.

²Dale E. Hathaway, "Facilitating Movements of Labor Out of Agriculture," American Economic Review, Vol. L, May, 1960, No. 2, p. 379.

by 1950. Less than 20 percent of the group 30-49 years old, migrated from farm in the same decade.¹ He stated:

Without out-migration the present problems of United States agriculture would have been magnified manyfold, and the gap between per capita incomes in the farm and non-farm economy certainly would have widened. As yet, however, there is no evidence that the rapid rate of out-migration has appreciably closed the gap that existed in per capita incomes of farm and non-farm people. Neither has the migration from agriculture apparently significantly changed the per capita income distribution between regions in agriculture.²

Hatheway also found in his study that most of the out-movement has been from farms of few resources. He pointed out that there are indications that the out-migration has severely strained the social and economic structure of many rural communities; it caused serious problems for churches, schools, and rural businesses dependent on numbers of population, and gave rise to pressing problems. But the total effect of migration from farms has apparently been of value to both the farm and non-farm economies.³

Income differentials are among the most important factors that cause the movement of people. A study by Taira on "Wage Differentials in Developing Countries: A Survey of Findings," shows that wage differentials between skilled and unskilled manual trades are wider in developing than in developed countries, inter-industry wage differentials are narrow in both, and that wage differentials between manual

¹Ibid., p. 379.

²Ibid.

³Ibid., p. 390.

and nonmanual occupations on the whole are wider in developing than in developed countries.¹

Johnson tried to compare farm and non-farm incomes. He found that the farm labor force has a larger proportion of its members in the age groups with lowest earnings. Using 1940 urban wage distributions by age and sex as weights, the 1940 farm labor force had an earning capacity about 4 percent below the non-farm labor force.²

In the study of "Private and Social Costs of the Movement of People Out of Agriculture," Maddox indicated that the costs associated with the movements of people out of agriculture are both numerous and large. Farm out-migration is almost certain to continue at high levels unless there is serious increase of unemployment, or increase in the demand of farm products.³

In this study Maddox estimates the distance that many farm people can travel as five hundred miles from their homes. They take ten days to get a non-farm job.⁴

Stouffer presented the idea that the number of people going a given distance from a point is not a function of distance directly but rather

¹Koji Taira, "Wage Differentials in Developing Countries: A Survey of Findings," International Labor Review, Vol. 93, No. 3 (March 1966), p. 301.

²Gale Johnson, "Comparability of Labor Capacities of Farm and Non-Farm Labor," American Economic Review, Vol. XLIII, June 1953, No. 3, p. 312.

³James G. Maddox, "Private and Social Costs of the Movement of People Out of Agriculture," American Economic Review, Vol. L (May 1960), No. 2, p. 401.

⁴Ibid., p. 393.

a function of spatial distribution of opportunities.¹ He thought that the number of people going "S" distance from a point is directly proportional to the number of opportunities on the perimeter of a circle with radius "S" and inversely proportional to the number of opportunities on or within that circle. In explaining the way of counting opportunities, he pointed out that they first propose a redefinition of intervening opportunities as follows:

- (1) Connect any two cities with a straight line.
- (2) Draw a circle with this line as a diameter.
- (3) Count the opportunities on or within this circle.....²

Nelson argued that in the past behavioral models of migration have focused on an individual maximising the money gains of movement. He found that taking migration between states from 1935-40 and 1949-50, in both periods migration was not significantly correlated with either income or unemployment differences. On the other hand he thought that there are other implications of the money income model. These are transportation costs and industrial similarity.³ In discussing the role of relatives and friends, Nelson stated:

¹Samuel A. Stouffer, "Intervening Opportunities and Competing Migrants," Journal of Regional Science, Vol. 2, No. 1, Spring 1960, p. 2.

²Ibid.

³Phillip Nelson, "Migration, Real Income, and Information," Journal of Regional Science, Vol. 1, Spring 1959, No. 2, p. 43. This article is based in part on Nelson's unpublished dissertation, A Study in the Geographic Mobility of Labor (Columbia 1957).

Relatives and friends play a particularly crucial role in our analysis since they have both an information and a real income function. Their behavior should have a significant impact on the behavior of migration if our hypotheses are valid.¹

Information in the labor market is apparently also an important factor in migration. Stigler pointed out that a worker will search for wage offers, while an employer will search for wage demands until the expected marginal return equals the marginal cost of search.² He regards the information a man possesses on labor market as capital. It was produced at the cost of search, and it yields a higher wage rate than what would be received in its absence.³ He thought that the amounts and kinds of information needed for the efficient allocation of labor are highly rewarding areas for future research.

Sjaastad did his study "Income and Migration in the United States" in 1961.⁴ Its central hypothesis that the geographic migration pattern responds to the regional income distribution has survived empirical tests based upon three essentially independent sets of migration data. Higher income states receive larger portions of both net and gross migrants from other states. In Sjaastad's words, these conclusions can be drawn from the data:

¹Ibid., p. 49.

²George J. Stigler, Information in the Labor Market, "The Journal of Political Economy", Vol. LXX, Supplement: October 1962, No. 5, Part 2, p. 96.

³Ibid., p. 103.

⁴Larry Sjaastad, Income and Migration in the United States, (Unpublished Ph.D. dissertation, Department of Economics, The University of Chicago, 1961, p. 70.

(a) The share of migration received is sharply reduced with increased distance from the sources of out-migration; (b) migrants favor destinations with lower skill levels; moreover, a 1 percent increase in skill level will deter in-migration substantially more than a 1 percent reduction in income (at least when skill is measured by the average earnings which labor in each state would obtain if paid the national average wage in each occupation); (c) the response to given income differentials decreases drastically with increasing age of the migrant; (d) large states attract smaller numbers of migrants relative to their population than do smaller states; (e) the differential incidence of the 1949 recession affected not only the level of out-migration from particular states, but also the allocation of migrants among destinations.¹

An important point that he brought out in the conclusion of the study about the role of migration in altering the regional income distribution is that study of migration alone could not answer the question, and that capital movements may be as important as migration in affecting per capita incomes. Also, the optimal spatial allocation of resources is continuously changing.²

Sjaastad in his paper, "The Costs and Returns of Human Migration," tried to develop the concepts and tools with which to attack a problem. That is, the movements of migrants are in the appropriate direction, but we do not know if their numbers are sufficient so as to be efficient in correcting income differentials. He said that there is a strong presumption that they are not.³

Hanna's study shows a marked tendency for states with unfavorable industrial compositions to have earning rates below the national average

¹Ibid.

²Ibid., p. 71.

³Larry Sjaastad, "The Costs and Returns of Human Migration," The Journal of Political Economy, Vol. LXX, Supplement: October 1962, No. 5, Part 2, p. 80.

for their industries, and conversely, for states with favorable industrial compositions to have above-average earning rates.¹ Sjaastad thought that Hanna's study, together with the observed relation between income and net migration, supports the hypothesis that migration does constitute a response to spatial earnings differentials. It is also consistent with the hypothesis that migration is a search for opportunities in higher-paying occupations.² In other parts of his paper, Sjaastad deals with the problem as one of resource allocation, treating migration as an investment increasing the productivity of human resources. This investment also has costs and returns.³

Some conclusions relevant to empirical undertakings which Sjaastad drew are:

(1) Gross rather than net migration is a more relevant concept for studying the returns to migration as well as the impact of migration upon earnings differentials; (2) migration rates are not an appropriate measure for estimating the effect of migration; (3) age is significant as a variable influencing migration and must be considered in interpreting earnings differentials over space and among occupations; (4) the relation between private and social costs of, and returns to, migration at best depends upon market structure, resource mobility in general, and revenue policies of state and local governments.⁴

A conference on "World Population Challenge to Development," was organized under the auspices of the United Nations in Yugoslavia in 1965.

¹Frank A. Hanna, State Income Differentials, (Duke University Press, Durham, N. C., 1959), p. 188.

²Ibid., p. 82.

³Ibid., p. 83.

⁴Ibid., p. 93.

Some of the papers and parts of the discussion were focused on internal migration and how to improve census survey and registration data. Studies presented at this conference also dealt with demographic, social, and economic consequences in both the sending and receiving areas. In a summary of this conference it was pointed out that:

In the process millions of agricultural workers are entering non-agricultural employment. The apparent motives for individual movements are mainly economic, in that migration is a major vehicle for improving levels of living but there are also non-economic factors, such as the greater social and cultural amenities of cities. In most of the developing countries, it is the more educated among the rural people who leave the villages for the towns; one participant at the Conference stated that a common reason for migration to towns given by persons questioned, in a recent survey in Ghana, was simply, "because I have been to school."¹

The studies show that the migrants are highly concentrated in the younger ages as in the case of international movements, about two thirds of them being between the ages of 15 and 29.²

A study on migration in Latin America pointed out that rural people ordinarily migrate directly to nearby small towns, and that the inhabitants of these towns stream into the few major cities. In another study on India it was noted that there is only a "push" of landless laborers into cities, but as a result of overfilled cities with migrants, they build up a countering pressure which the study refers to as "push-back."

¹United Nations, World Population: Challenge to Development, Summary of the Highlights of the World Population Conference (Belgrade, Yugoslavia, 30 August to 10 September 1965), New York, 1966, p. 24.

²Ibid., p. 24.

It was suggested in the papers and discussions that there is a need for national migration policies which could be integrated with the economic and social policies and plans of the country concerned. It was mentioned also that some countries already have plans of deconcentration of the largest cities, guiding migration to the location of new industries. There was general approval of the idea of industrializing backward regions for redistribution of population. Other papers showed that deconcentrating had already started in Europe, and that major cities have been losing population to the surrounding suburban areas.¹

In Methods of Regional Analysis: An Introduction to Regional Science, by Walter Isard, migration estimation is discussed. He thinks that estimates of interregional migration are significantly affected by the following factors:

1. The size and shape of spatial units chosen for study.
2. The time period considered.
3. Distribution of population within the spatial units.
4. Finally, as the time period considered increases, total migration increases; but migration per unit of time, as estimated by a number of methods, declines. The first result is due to greater chance of migration in a longer span of time. The second result is due to failure to record migrations of persons who have died previous to census count, and failure to count as more than one the migrations of persons who have shifted two or more times between census counts.

¹Ibid., p. 26.

He explained different ways of migration estimation. In conclusion he pointed out:

In conclusion we can only reiterate that methods for estimating migration are not nearly as good as we might like them to be. For fairly obvious reasons more reliable estimates can be made for past migration than for future migration.¹

¹Walter Isard, in association with others, Methods of Regional Analysis: An Introduction of Regional Science. (The Technology Press of the Massachusetts Institute of Technology and Wiley & Sons, Inc., New York, 1960), p. 69.

CHAPTER IV

FORMULATION OF THE MODEL

In building a migration model we begin by assuming that an individual migrates from governorate i to governorate j in response to different factors. It is difficult to measure and introduce into the model all factors. We selected the factors that are thought to be the most important determinants of migration from i to j .

Economic and noneconomic factors affect an individual's decision to migrate. An individual may move to another place in order to take a new job or to search for a job. He may also move because of changing his social status. An individual may also move because of preferring the climate of another place, or to get better medical care in special places such as big cities or famous medical centers. There are other reasons that influence movement of an individual such as the attractiveness of living in big or small towns. Big cities have movies, theaters, nice places, developed markets, and generally more modern life, while small cities are more quiet than big cities, costs of living are lower, and life is more simple. A person may move to attend school or university in the other place, or for many other personal reasons.

Dependent Variable

In this study we use the rate of male migration as a measure of migration. This rate $\frac{MM_{ij}}{MP_i}$ is the dependent variable. MM_{ij} is the number of males that was born in governorate i and enumerated in governorate j on the census night of September 20/21, 1960. MP_i is the total male population enumerated in governorate i that same night.

In this census individuals were enumerated at the place at which they were found or place of residence, on the night of enumeration regardless of being permanent or temporary residents.

One of the main reasons for collecting the data on 20/21 September 1960 was that, in that period of time, it was probable that the least population of temporary movement would be found. But it is impossible to avoid temporary movements of population completely. Presumably there would be different temporary migration rates. However, since it is not possible from the census data available to separate migrants that moved for one night or a few days from those who moved permanently, the discussion will be neglected, and it will be assumed that all migrants enumerated in governorate j were permanent migrants.

The rate of male migration used in this study, found by dividing the number of male migrants by the number of the total male population of origin, is used so as to eliminate the effect of variation in population size between governorates.

Independent Variables

The measure of male migration that is used in this study is the amount of accumulated male migration which occurred prior to 1960. But some of the independent variables, such as the income variable are the average of one year, 1960. So the basis of computing the rate of migration is different than that of computing some of these independent variables. The use of income in the last year as an explanatory variable of accumulated migration over a period of years may not be a serious limitation. Migration has been greater in recent years because of the building-up the economy and changes in the social structure and the political structure after the new regime of 1952, which has increased opportunities and mobility of people throughout the nation. In any case, data better than that used in this study are not available.

Expected Effects and Definitions of Independent Variables

Distance (D_{ij})¹. Distance between origin and destination is an important factor that is expected to effect population migration. Long distance reflects high transportation costs which every individual thinks about before moving. Moving for a distance may lead to change in culture, language, family ties and pattern of life which may be obstacles to migrating.

Information about job opportunities is important for migration. The longer the distance the less the chance of getting information about

¹ Source of data on distance is the Department of Railway of Egypt. For details see Appendix.

jobs. If an individual has to move a long distance searching for a job, this will cost him money and time.

In general, it is expected that the more distance between origin and destination, the less people will migrate. So the migration rate of male population is expected to vary inversely with distance.

Capitals of governorates shown in Table 12 in Appendix are considered as cities of origin and destination for ease in measuring distance by kilometer.

Population of Origin and Destination (P_i, P_j)¹. Population of origin and destination are factors which are expected to influence population in an important way. If population of the origin is large, more people are expected to have a given reason to migrate. Population of destination might be an indication of the size of the labor market there.

Information on job opportunities may be affected by the size of population. If population of an area is doubled, the number of people hearing about job opportunities may increase and the labor market may also increase and therefore the migration rate increases.

Population of origin and destination are numbers of population on the census night of September 20/21, 1960. Male population MP_i of origin and MP_j of destination of the same source are used in this analysis instead of the total population.

¹Source of population of origin and destination is the 1960 Census of Population.

Income of Origin and Destination (Y_1, Y_2)¹. Annual average wage per worker in industrial establishments employing 10 or more persons in 1960 is used in this study as an indicator of the average income in the governorate. There is no data about per capita income on the governorate level. When a potential migrant thinks of moving, he is not moving to another place because the average level of income is higher there. But there are some other factors which may reflect the higher level of income. An individual may know through friends or relatives that the salary of the same job he has is higher in the other place. Or getting higher position and higher salary is easier in the other place. If he is an educated or skilled person he may know about other opportunities through newspapers. There may be word that companies such as in the petroleum industry pay higher salaries and provide services such as medical care, housing, etc. The existence of these kinds of industries and word of the high incomes received by its workers may attract other individuals to move in order to obtain the higher incomes and other benefits.

On the other hand higher income in destination may not attract some individuals to move. An individual may prefer to live with his family or beside them, near to his friends, because the climate is better in his home place, because he does not like to move, or because he does not like to change his children's schools, and other reasons. So high income may not be the only factor affecting migration.

¹Source of data on income is the Central Statistical Committee of Cairo, Basic Statistics, June 1962, pp. 90-93.

But it is expected in general that places of high income will attract migrants who are searching for higher salaries. So it is expected that the rate of male migration will have a positive relationship with average level of income in destination. If level of income is low in origin, this means that many persons have low income because the area may be poor in natural resources, or opportunities for jobs are few. In this case some individuals may move. It is expected that the lower the level of income, the higher the rate of male migration will be from origin to other places. So the rate of male migration and the level of income in origin have a negative relationship.

Income differences $\frac{Y_j}{Y_i}$ are factors which are expected to influence rate of male migration. The response of migrants to income differentials is not fast. If it is rapid, migration would lead to elimination differences in income between areas.

Urban Population in Origin and Destination (U_i, U_j)¹. Urban areas attract migrants for many and complex reasons. Overpopulated land pushes people to urban areas seeking for a better life and a higher level of income; this is one of the important reasons. Growth of urban areas in Egypt and other different countries were mentioned in Chapter II. All kinds of skills, experiences, and jobs can be found in urban areas. A migrant may expect to find a variety of choices in a good job.

Schools and universities are mostly in urban areas. In Egypt most of the high schools are in urban areas. Universities are in Cairo,

¹Source of urban population is the 1960 Census of Population.

Alexandria and Assyuit. Many students alone and sometimes with their families move to big cities for education.

Migration to urban areas creates many problems such as transportation, housing, and shortage of services. In the last few years Cairo has faced serious problems of these kinds. One of the main reasons for the shortage of some kinds of food and materials is migration from rural to urban areas in Egypt. Demand increases for several kinds of food such as bread made of wheat (farmers are used to eating bread made of corn), and many other products causing problems of high prices and black markets.

Big cities have advantages and disadvantages, good things and bad things, chances and problems.

According to Reissman, William Munro has put it concisely:

The city has more wealth than the country, more skill, more erudition within its bounds, more initiative, more philanthropy, more science, more divorces, more aliens, more births and deaths, more accidents, more rich, more poor, more wise men and more fools. It is characteristic of city life that all sorts of people meet and mingle without in the least understanding one another.¹

Urban population in destination is expected to have a positive relationship with male migration rate.

Urban population in the origin may move to other urban areas, and few of them may move to rural areas. It is expected that the factor of urban population in origin is positive but not important in affecting rate of male migration.

¹Leonard Reissman, The Urban Process, Cities in Industrial Societies, (The Free Press of Glencoe, A Division of the Macmillan Company, New York, 1964), p. 6.

Percent of male urban population, that is, the number of male urban population divided by total male population is used in this analysis.

Education Level (E_i, E_j)¹. People that are educated are expected to be more mobile than uneducated people. An educated individual can get more information about opportunities in other places. He also may have many chances to get a better job especially if he is a skilled and experienced educated person. An educated person may have a higher propensity to move than an uneducated one. Educated people are more adaptable also. Most uneducated persons in Egypt are living on farms. A farmer who is used to work in this field, whose father and grandfather were also farmers may find it difficult to change from this kind of job and also difficult to give up the cultural customs and habits of farm people. Most uneducated persons also are expected not to be skilled or experienced in any kind of job. And this may be an obstacle for them in finding a job. The uneducated persons have less propensity to move than the educated person. At the same time, the uneducated person may be forced to move to other places to search for a job. The great need of having a job so as to be responsible for himself and to be able to raise his family may force a person to move.

In general it is expected that an educated person, is more likely to move than an uneducated person, and that the relationship between rate of male migration and median level of education is positive. The higher

¹Source of data on education level is the 1960 Census of Population. For details see Appendix.

the level of education in origin, the higher the rate of migration expected.

E_i and E_j are educational level per capita in origin and destination respectively. Median of years spent in all levels of education according to the condition on the census night of September 20/21, 1960 was computed (see Appendix) for the analysis. $\frac{ME_i}{MP_i}$ and $\frac{ME_j}{MP_j}$ are the median per capita of years of education for male population that are used in this study, and which we represent by the symbols E_i and E_j in the general formulation of the model that will be provided in the next chapter with the effects of independent variables.

CHAPTER V

EFFECTS OF INDEPENDENT VARIABLES

In the analysis of the migration model, we assume that each individual moves in response to many factors. Geographical distribution of male population by governorate of birth and governorate of residence is used as the measure of migration. The male population born in one governorate and enumerated in another governorate was considered as accumulated-out migration over previous years. The rate of male population migration is the dependent variable in this study. The dependent variable is expressed by the multiple regression method as a function of many explanatory variables.¹ The rate of male migration is a product of independent variables. The multiple regression program was run on logarithms and in linear form.

The relationship between the dependent and independent variables is represented by the following general formulation:

$$\text{Equation 2.1} = \frac{MP_{ij}}{MP_i} = f(D_{ij}, P_i, P_j, Y_i, Y_j, E_i, E_j, U_i, U_j, \text{random errors})$$

The method of least squares is employed. Student's t-test was used in this study to test hypothesis on the 5% level. The symbols of the equation above stand for the following:

¹Michael J. Brennan, Preface to Econometrics. An Introduction to Quantitative Methods in Economics, (South-Western Publishing Company, Chicago, 1965), p. 337.

- MM_{ij} : number of male migrants, that is the male population which was born in governorate i and enumerated in governorate j on the census night of September 20/21, 1960.
- MP_i : ^{male} total population of governorate i which was enumerated on the census night of September 20/21, 1960.
- D_{ij} : distance from origin i to destination j by kilometer-railway.
- MP_j : ^{male} total population of governorate j which was enumerated on the census night of September 20/21, 1960.
- Y_i : average annual wage per worker in L.E. (L.E. stands for Egyptian pound, which is about two dollars), for industrial establishments employing 10 persons and more in 1960 in governorate i .
- Y_j : average annual wage per worker in L.E. (L.E. stands for Egyptian pound which is about two dollars), for industrial establishments employing 10 persons and more in 1960 in governorate j .
- E_i : numbers of years of education per capita in governorate i , 1960.
- E_j : numbers of years per capita in governorate j , 1960.
- U_i : percent of urban population in origin according to 1960 Census of Population.
- U_j : percent of urban population in destination according to 1960 Census of Population.

The Results

The results of this study of migration in Egypt are presented and analyzed and also compared with some results of a study by Sjaastad¹ on

¹Sjaastad, Larry, "Income and Migration in the United States," Unpublished Ph.D. dissertation, Department of Economics, The University of Chicago, 1961.

migration in the United States. By comparing the results of analysis of factors affecting internal migration of a developing economy such as Egypt with a developed economy such as the United States, differences may be observed in the effects of the variables on internal migration in both countries. The results of Egypt's study, Table 12, compared with the results of some variables of Sjaastad study can be stated as follows:

Distance: the coefficient of distance between origin and destination in equation 2.1, Table 12 of Egypt is -1.059 and highly significant. This result is consistent with the hypothesis that male migration varies inversely with distance, which reflects costs of moving and knowledge about opportunities and may be also due to the low propensity of male population to move far distances. This result also means that if distance between origin and destination increases by 1 per cent, male migration will decrease by 1.059 percent. In Sjaastad's analysis of geographic migration, which utilizes the 1950 distribution of all living native white interstate migrants by states of birth and state of resident, migration varies inversely with distance and distance explained a very high portion of the total variance in shares of migrants.¹ This result is consistent with that of Egypt's result concerning this variable.

Population of Origin: the coefficient of population of origin is $.699$ (equation 2.1), with positive sign and significant. This means that if the size of the population in origin increases by 1 per cent, male migration will increase by $.699$ per cent. According to this result, the

¹Ibid., p. 15.

TABLE 12

GROSS INTERNAL MIGRATION 1960 IN EGYPT

Dependent variables	D _{1j}	Independent Variables							D _F [*]	RSQ ^{**}
		MP ₁	Y ₁	Y _j	K ₁	K _j	U ₁	U _j		
2.1	β: -1.059 σ: (.088) t: -12.073	.699 (.236) 3.745	-1.406 (.272) -5.172	.651 (.124) 5.267	-.744 (.307) -2.426	.638 (.221) 2.882	.498 (.255) 1.955	.811 (.164) 4.945	172	.733
2.2	-1.001 (.086) -11.646	.504 (.172) 2.931	.769 (.237) 3.248		-.590 (.305) -1.935	.661 (.224) 2.947	.336 (.250) 1.344	.686 (.159) 4.303	173	.724
								.784 6.856		

^aDependent variable is the rate of male migration $\frac{MP_{1,j}}{MP_1}$

β : is the partial regression coefficient

σ : is the standard error.

t : is the t "Student's" test, value for this study must be more than 2.2414 to be significant at the 5% level.

^{*}D_F: are the degrees of freedom.

^{**}RSQ: is the percentage of variation that has been explained by the independent variables.

larger the size of population in origin, the higher the rate of male migration, and this was expected in the hypothesis set forth in the last chapter.

Population of Destination: the coefficient of this variable is positive, significant, and higher than that of the origin; according to equation 2.1. The coefficient is .844, which means that if the size of the population in destination increases by 1 percent the rate of male migration will increase by .844 percent. We expected that populations of origin and destination would effect the rate of male migration primarily because these variables affect other forces influencing migration. Comparing this result with Sjaastad's, large states in the United States attract smaller number of migrants relative to their population than do smaller states.¹ This result is opposite to the result in this study of Egypt.

Income of Origin: this variable was computed for equation 2.1 only. The coefficient is -1.466, which is also significant. Income of origin has the expected sign. This indicates that if the variable of income in origin decreases by 1 per cent the rate of male migration will increase by 1.406 percent.

Income of Destination: the coefficient of this variable is .651 and it is significant (Table 12) (Equation 2.1). This result is consistent with what we expect, that high income areas attract migrants. In equation 2.2, we used an alternative to income Y_i and Y_j , the income differences. The ratio of Y_i to Y_j is used to represent the difference

¹Ibid., p. 70.

in income between origin and destination governorates. The coefficient of this variable is .784 and it is significant. We expected that migrants would respond to income differences. In the same study of the United States (Sjaastad study), a strong positive relation between migration rates and income levels¹ is found (for destination) as most significant of this study. But although there was a strong relationship, the response of migrants to income differentials was weak during the 1940's.²

Education of Origin: the coefficient of the average level per capita of education in origin has the wrong sign, in equation 2.1. The coefficient of this variable is -.744 which is significant. We expected that the higher the average level per capita of education in origin, the higher the rate of male migration will be. The result is the opposite of our expectation, it indicates that the lower the level of education, the higher the rate of male migration. A possible explanation of the negative sign is that uneducated persons, who are mostly the farm people, migrate to towns and big cities to get jobs and obtain a better life. Another explanation of this result may be that males with a low level of education are moving so as to get more education in other areas. This might be also a result of the movement from rural areas where male people are not educated to urban areas where the level of education is higher. On education Sjaastad found a positive partial

¹Income in Sjaastad study is per capita wage, salary, other labor income and proprietor's income (for details see Appendix VI, p. 106).

²Ibid., p. 38.

regression coefficient and suggested that this may be due to the fact that migrants are significantly more educated than non-migrants. So, the result would be a lower level of education in sending states and a higher level in receiving states.¹ This result is derived from the study of Sjaastad where he deals with net migration over one decade, 1940-1950. Comparing this result (taking into consideration the difference in measures and periods of both studies in Egypt and the United States), for the education variable Egypt's result is opposite to that of the United States, as low level of educated male population appeared to be more mobile than those who were educated.

Education of Destination: this variable has the expected sign. The coefficient of the average level of education per capita is .638. This means that, if the level of education per capita in destination increases by 1 percent, the rate of male migration will increase by .638 percent, equation 2.1. This result indicates that the higher the level of education in destination the higher the rate of male migration. This may be due to movement towards urban areas where the level of education is higher than in rural areas.

Percent of Urban Male Population in Origin: the coefficient of this variable is .498 and insignificant. We expected that male population of urban areas may have low propensity to move. This is apparently true but not at a statistically significant rate (equation 2.1).

Percent of Urban Population in Destination: this variable's coefficient is .811 and significant. This indicates that if urban

¹Ibid., p. 33.

population increases in destination by 1 percent, the rate of male migration will increase by .611 percent. It was expected that the rate of male migration would increase if percent of urban population in destination increases, as urban areas offer expanding economic opportunities while rural areas in Egypt do not.

The Importance of Independent Variables

Factors affecting internal migration in a country may differ over time. Factors affecting migration in one period of time may not be the same in other periods.

In this study of Egypt, the most important variables which affected the rate of male migration in 1960 are the level of income in destination and distance. This result is reasonable in a study of migration in a developing economy. Unemployment, disguised unemployment, and low income of people who are living in rural areas and who account for about two-thirds of the total population, are important factors of migration. This is especially so since the beginning of the 1952 revolution when great efforts were initiated to develop the economy of the country, improve the social life of the people, create new opportunities for jobs, and increase the level of public education, all of which tended to increase the advantages of living in urban areas. Distance is also expected to be an important factor in Egypt although the area that the people can move in is not large, the inhabited area being 35.4 thousand square kilometers in 1960. Costs of moving and getting information or searching for jobs in other areas may not be

easy, as a result of the low level of income of most of the people who are searching for jobs (unemployed persons). Getting information about jobs is also another obstacle for moving as about 69 percent of the population (excluding persons who are less than 10 years old) were still illiterate as late as the 1960 census of population. There may be also a reluctance for the male population to move great distances because of some social and personal factors.

The next most important factors effecting the rate of male migration are the size of the population in destination and the percent of urban population in destination. Possible explanations for the importance of the size of population in destination are that the size of the labor market may be related to the population. Male migrants may be moving to places where labor markets are large. Another possible explanation is that the larger the size of the population the better the facilities such as housing, schools, other services. Areas of large size of population are mostly urban areas, which also attract migrants. Percent of urban population is one of the most important factors which affect the rate of male population. In this stage of economic and social development in Egypt the condition of overpopulation and low income are especially prevalent in rural areas. The industries and other economic activities are concentrated in urban areas. It is natural to expect a movement of people from rural to urban areas. These factors in addition to the attractiveness of urban areas and modern life that were discussed in the last chapter have affected the rate of male migration. Level of education per capita in origin can be considered also as an important

factor (its coefficient is $-.744$) but less than those mentioned above. The other factors, size of population of origin, income in destination, level of education per capita in origin, and the percent of urban population in origin are less important than the other variables.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The main purpose of this study was to analyze the influence of some selected factors on the geographical migration pattern in Egypt. The hypothesis is that migrants responded to regional factors which are distance, size of population, income, level of education, and percent of urban population. The empirical test of the hypothesis is based on one measure of migration data--that is, the place of birth and place of enumeration of 1960 Census of Population. The results obtained can be considered as highly consistent, with a few exceptions. Data for this study is employed on the governorate level, and when running the program, these data were pooled together to get multiple regression equations for the whole country. Two equations 2.1 and 2.2 of Table 12 were selected to show the relationship between the dependent and independent variables.

The following conclusions can be drawn from the results: (a) the rate of male migration decreases if distance increases. Distance elasticities are significant and little more than unity with a negative sign; (b) both the population size of origin and destination affect male migration. They are both significant and have positive signs. Destination coefficients of this variable are higher than those of the origin; (c) movements of male migrants are affected by the level of income. The coefficient of income in origin is about double of that of destination

and both of them are significant and have the expected sign. Difference in the level of income is used in equation 2.2 as an alternative to the level of income in equation 2.1. This factor also significantly affects the rate of male migration; (d) education level per capita for origin has the wrong sign, which means that if the level of education in origin increases the rate of male migration will decrease. Destination coefficients of the level of education are significant and have the right sign. The relationship between the rate of male migration and this variable is positive. This indicates that if the level of education in destination increases, the rate of male migration will also increase; (e) the percent of urban population in the origin seems to be a weak factor in affecting the rate of male migration, and it is also not significant in both equations. Percent of urban population in destination significantly affects the rate of male migration. Urban areas are attracting male migrants as was expected.

A comparison between Egypt and some other countries on the growth of urban population, which is mostly a result of rural-urban migration is included in this study (Chapter II) as it is the most important kind of internal migration. Different countries have different rates of growth of urban population in different periods of time, according to the stage of development, historical and other factors.

Correct placement of population as a human resource can provide greatest efficiency in its use. Internal migration can alter the regional income distribution and the pattern of social life.

In the last few decades the rate of migration increased in Egypt. And in the last few years the level of income also increased as a result of fulfilling the comprehensive plan of economic and social development. The development that occurred in the economic and social field cannot be drawn only from the role of population migration. The roles of other important factors have to be studied as the efforts of reallocating of industries among different areas of Egypt and capital movements. The role of migration in affecting the national product or income is beyond the scope of this study.

An additional study that might be made is the analysis of factors affecting rate of migration on the governorate level. Other studies on population migration analyze other influences which cause migrants to move such as sex, age, occupation, the income level before and after migrating. Studies of gross and net migration rates in different periods of time and time of migrating are needed for comparisons.

BIBLIOGRAPHY

Book

- Bechara, Aida, Industrial Location in the Egyptian Region, Dar El Nahda, Cairo, 1962.
- Booastedt, Olaf, Some National Approaches to Delimiting Urban Boundaries. Urban Research Methods, D. Van Nostrand Co., Inc., Princeton, New Jersey, 1961.
- Brennan, Michael J., Preface to Econometrics. An Introduction to Quantitative Methods in Economics, South-Western Publishing Company, Chicago, 1965.
- Ginzberg, Eli, Human Resources. The Wealth of a Nation, Simon and Schuster, New York, 1958.
- Goodrich, Carter and others, Migration and Economic Opportunities, University of Pennsylvania Press, 1936.
- Hanna, Frank A., State Income Differential, Duke University Press, Durham, N. C., 1959.
- Isard, Walter, Methods of Regional Analysis: An Introduction of Regional Science, The Technology Press of Massachusetts Institute of Technology and Wiley & Sons, Inc., New York, 1960.
- Issawi, Charles, Egypt in Revolution. An Economic Analysis, Oxford University Press, New York, 1963.
- Shryock, Henry, Population Mobility Within the United States, Community and Family Study Center, Chicago, 1964.
- Taft, Donald R., Human Migration. A Study of International Movements, The Ronald Press Company, New York, 1936.
- United Nations, Demographic Yearbook, 1960 and 1961.
- United Nations, Economic Commission for Africa, Seminar on Population Problems in Africa, 29 Oct. to 10 Nov., 1962.

United Nations, International Social Service Review, Urbanization in the Arab States and its Effect on Family Life, No. 9, New York, April 1963.

United Nations, World Population Challenge to Development, Conference of Belgrade, Yugoslavia, 30 August to 10 September 1965, New York.

Government Publications

Department of Statistics and Census, 1960 Census of Population, Volume II, Cairo, July 1963.

Central Statistical Committee, Basic Statistics, Cairo, June 1962.

Egyptian Association of Population Studies of Cairo, Basics of Population Policies 1964.

Periodicals

El-Ahram, Daily Newspaper, Internal Migration in Egypt, 17 Jan., 1962.

Ravenstein, E. G., The Laws of Migration, Journal of the (Royal) Statistical Society, XLVIII, 1885.

Hathaway, Dale E., "Facilitating Movements of Labor Out of Agriculture," American Economic Review, Vol. I, May, 1960, No. 2.

Taira, Koje, "Wage Differentials in Developing Countries," A survey of findings, International Labor Review, Vol., 93, No. 3, March 1966.

Johnson, Gale, "Comparability of Labor Capacities of Farm and Non-Farm Labor," American Economic Review, Vol. XLIII, June 1953.

Maddox, James G., "Private and Social Costs of the Movement of People Out of Agriculture," American Economic Review, Vol. L, May 1960, No. 2.

Nelson, Phillip, "Migration, Real Income, and Information," Journal of Regional Science, Vol. I, Spring 1959, No. 2.

Sjaastad, Larry, "The Costs and Returns of Human Migration," The Journal of Political Economy, Vol. LXX, Supplement, October 1962, No. 5.

Stauffer, Samuel A., "Intervening Opportunities and Competing Migrants," Journal of Regional Science, Vol. 2, No. 1, Spring 1960.

Stigler, George J. "Information in the Labor Market," The Journal of Political Economy, Vol. LXI, Supplement, October 1962. No. 5.

Unpublished Material

Sjaastad, Larry, "Income and Migration in the United States," Unpublished Ph.D. dissertation, Department of Economics, The University of Chicago, 1961.

APPENDIX

UNITS, ESTIMATES, DEFINITIONS

The statistical analysis as outlined in Chapter I is carried out at the level of the whole country. Data were derived from the 1960 Census of Population and other sources as will be mentioned later, on the governorate level and then pooled together.¹

Concept and Definitions of 1960 Census of Population

The basic 1960 Census of Population was "de facto" which means that all persons were counted at the place where they were at the time of enumeration.

An administrative classification for geographic divisions was prepared for the first time for census purposes in 1960. Financial boundaries were applied at preceding censuses.

Coverage. All persons within the territory of Egypt at census time were enumerated except transit travelers on ships in coastal areas and passing the Suez Canal.

Urban. Includes governorates of Cairo, Alexandria, Port Said, Ismailie, Suez, Frontier Governorates and capitals of other governorates as well as district (Markaz) capitals.

Rural. Other localities.

Birth Place. The name of district (Kism or Markaz) where the person was born.

¹See the introduction of the "1960 Census of Population," Vol. 11, Department of Statistics and Census, Cairo, 1963.

Unemployed. A person is considered unemployed if he (or she) is able to work and is seeking work but not employed.¹

Estimate of Education Level.

Education Status: The following National Standard Classification adopted by the Central Statistical Committee was applied:

1. Elementary level: the first level of education. It takes four to six years.
2. Preparatory and similar level: it follows the elementary level and is ended by the beginning of the secondary level. It takes two to three years.
3. Secondary level and similar level: it starts after the preparation level. It takes one to three years.
4. More than Medium Level or less than Bachelorship Degree. It takes not more than three years.
5. Bachelorship Degree and Similar Level: It starts after secondary level and takes at least four years.
6. Postgraduate Diploma: after university graduation. It takes one to three years.
7. Master's Degree: after Bachelorship or Postgraduate Diploma. It is ended by a research.²

In the instructions of the census questionnaire, it was mentioned in item (12) for education that enumerators have to collect data for persons 10 years old and over. And whenever applicable, the name of the highest certificate attained.

In this paper we calculated the years spent to get every certificate as follows:

¹Ibid., p. 13.

²The Central Statistical Committee, 1960-1961, Eastern Advertising Company Press, 1961, p. 145--in Arabic.

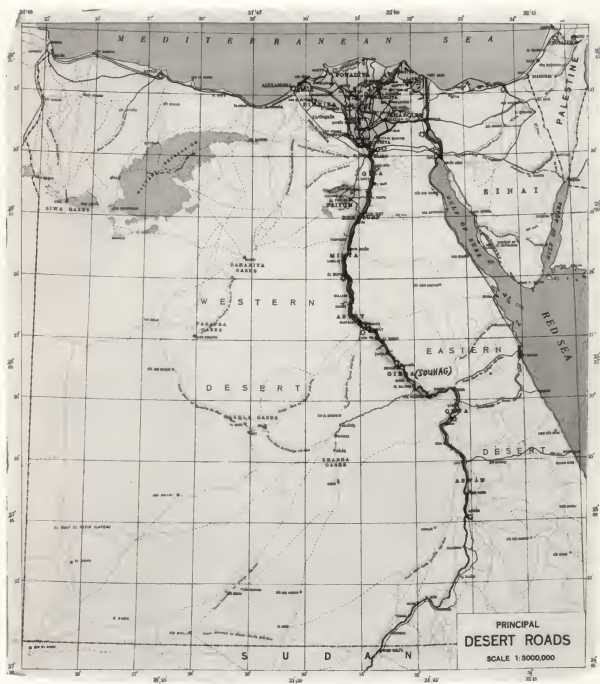
<u>The certificate</u>	<u>Years of each level</u>	<u>Total years spent to get a certificate</u>
Certificate below intermediate	6	6
Intermediate certificate	4	10
Diploma below university	2	12
University first degree	4	16
Postgraduate diploma	1	17
Master's degree	1	18
Doctorate	2	20

The second step to get the measure of man-year education that we used in the paper was the following:

1. Multiply the total number of years to get a certificate by the number of male and total population that had this certificate in the census (Table 6--1960 Census of Population, Volume II, Cairo, July 1963).

2. Add the results of (1) for all governorates.

3. Divide the result of (2) by the total number of years spent to get all certificates result of (1) so as to get the average of years for every governorate and then the average of the whole country, ME_i TE_i ME_j and TE_j are the man-year education for male and total population in the origin and destination i and j .



MAP OF EGYPT

**ANALYSIS OF FACTORS AFFECTING POPULATION MIGRATION
IN A DEVELOPING ECONOMY--A CASE STUDY ON EGYPT**

by

AMIRA EL-BASSYOUNI

B. S., Alexandria University, 1957

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARTS

Department of Economics

**KANSAS STATE UNIVERSITY
Manhattan, Kansas**

1967

Studies of population distribution, urbanization, and internal migration are important for economic and social planning. Furnishing public utilities, industrial location, population settlement, manpower planning, education and training, urban development planning and balanced development of economic sectors, etc., should be based on the results of these studies.

The main purpose of this study was to analyze the influence of some selected factors on the geographical migration pattern in Egypt.

There are many economic, social, demographic, personal, and other factors that may affect internal migration. Population migration has its economic impact on both origin and destination. By an optimum utilization of the available natural, human, and financial resources, economic planning can achieve an increase in national production and standard of living.

The hypothesis in this study is that migrants responded to regional factors of distance, size of population, income, level of education, and percent of urban population. The empirical test for the study is based on one measure of migration data, that is the place of birth and place of enumeration of the 1960 Census of Population.

The results obtained can be considered as highly consistent, with a few exceptions.

Two multiple regression equations were analyzed in this study. The following conclusions can be drawn from the results: (a) The rate of male migration decreases if distance between origin and destination increases. Distance elasticities are significant and little more than

unity with a negative sign; (b) Both population size of origin and destination affect male migration. They both are significant and have positive sign. Destination coefficients of this variable are higher than those of the origin; (c) Movements of male population are affected by the level of income. Coefficients relating income in origin to migration are about double that of destination and both of them are significant and have the expected sign. Differences in the level of income were also used as an alternative to the level of income. This factor also significantly affects the rate of male migration; (d) Education level per capita for origin has the wrong sign, which means that the higher the level of education in origin, the lower the rate of male migration. Destination coefficients for the level of education are significant and have the right sign. The relationship between the rate of male migration and this variable is positive; (e) Percent of urban population in the origin seems to be a weak factor in effecting the rate of male migration. It is also not significant in both equations. Percent of urban population in destination significantly affects the rate of male migration. Urban areas are attracting male migrants as was expected.

A comparison between Egypt and some other countries on the growth of urban population, which is mostly a result of rural-urban migration is included in this study (Chapter II). Rural-urban migration is the most important kind of internal migration. The study shows that different countries have different rates of growth of urban population in different periods of time, according to the stage of development,

historical, and other factors. Through history, the urban cycle has always been the same: population growth transformed rural areas into urban areas and cities. Industrialization is an important factor affecting growth of cities. An example of the growth of population of the Egyptian town Mahalla is explained in this study. Its population increased by 20 percent in the decade 1927-37, and this rate rose to 83 percent in the decade 1947-57 as a result of establishing the biggest textile works in the Middle East (Misr Spinning and Weaving Co.).

Growth of urban areas creates many problems of transportation, housing, schools, and shortage of many services. On the other hand transferring individuals from overpopulated areas to other areas where they can find jobs and increase their incomes or have a better life is an important process in a developing economy.